ORDER NO. TSD-7904-639

Service Manual

Compact Stereo

FM/AM/FM STEREO RADIO WITH CASSETTE TAPE DECK AND RECORD CHANGER

SE-2519/C

SE-2519/C

SPEAKER SYSTEM: MODEL NO. SB-280
(The Speaker System for SE-2519C is optional.)

Specifications

AMPLIFIER SECTION

Power Output	RMS 2 × 2.4W (at 1 kHz, THD 5%, 8Ω) Both Channel Driven
Frequency Response	50 Hz ~ 40 kHz, −3 dB
Input Sensitivity and Impedance:	
Mic	1 mV, 1 kΩ
Aux	250 mV, 50 kΩ
Tone Controls:	
Bass	±10 dB at 100 Hz
Treble	±10 dB at 10 kHz

FM TUNER SECTION

Frequency Range	88 ~ 108 MHz
Intermediate Frequency	10.7 MHz
Sensitivity	4 μV (S/N 30 dB Mod. 22.5 kHz)
Signal to Noise Ratio	56 dB (at 1 kHz, 60 dB, 22.5 kHz)
Distortion	Mono 0.3% (at 1 kHz, 60 dB, 30%) Stereo 0.5% (at 1 kHz, 60 dB, 30%)
Stereo Separation	38 dB (at 1 kHz, 60 dB, 30%)

AM TUNER SECTION

Frequency Range	525 ~ 1605 kHz
Intermediate Frequency	455 kHz
Sensitivity	100 μV/m for 50 mW (1 MHz)
Image Ratio	36 dB (1 MHz)

RECORD PLAYER SECTION

Type	Automatic Record Changer
Turntable Size	28 cm (11″)
Turntable Speeds	2-Speed (33-1/3, 45 r.p.m.)
Phono Motor	2 Pole Induction
Cartridge	Ceramic (EPC09STAD)
Stylus	Diamond (EPS27STSD)
Stylus Pressure	3.5 ~ 4.5g
Wow and Flutter	0.3% (WRMS)

TAPE DECK SECTION

Deck System	Front Loading, Auto Stop
Track System	4-Track, 2-Channel
Recording System	AC Bias 47 kHz
Erasing System	AC Erase 47 kHz
Tape Speed	4.8 cm/sec (1-7/8 i.p.s.)
Frequency Response	70 Hz ~ 10 kHz (Normal)
Signal to Noise Ratio	43 dB
Wow and Flutter	0.2% (WRMS)

SPEAKER SYSTEM SECTION (SB-280)

Speaker System	2-Way Full Range Speaker
Speaker Unit	Passive Radiator, 16 cm (6-1/2″) 13 cm (5-1/4″) × 2
Impedance	8Ω

POWER SUPPLY ..... AC 120V, 60 Hz

POWER CONSUMPTION 40W

DIMENSIONS (W × H × D)

Center Unit	552 mm × 235 mm × 426 mm (21-3/4″ × 9-1/4″ × 16-3/4″)
Speaker Box	328 mm × 457 mm × 210 mm (13″ × 18″ × 8-1/4″)

WEIGHT

Center Unit	7.8 kg (17 lb 3 oz)
Speaker Box	5.3 kg (11 lb 3/4 oz)

* Specifications are subject to change without notice for further improvement.

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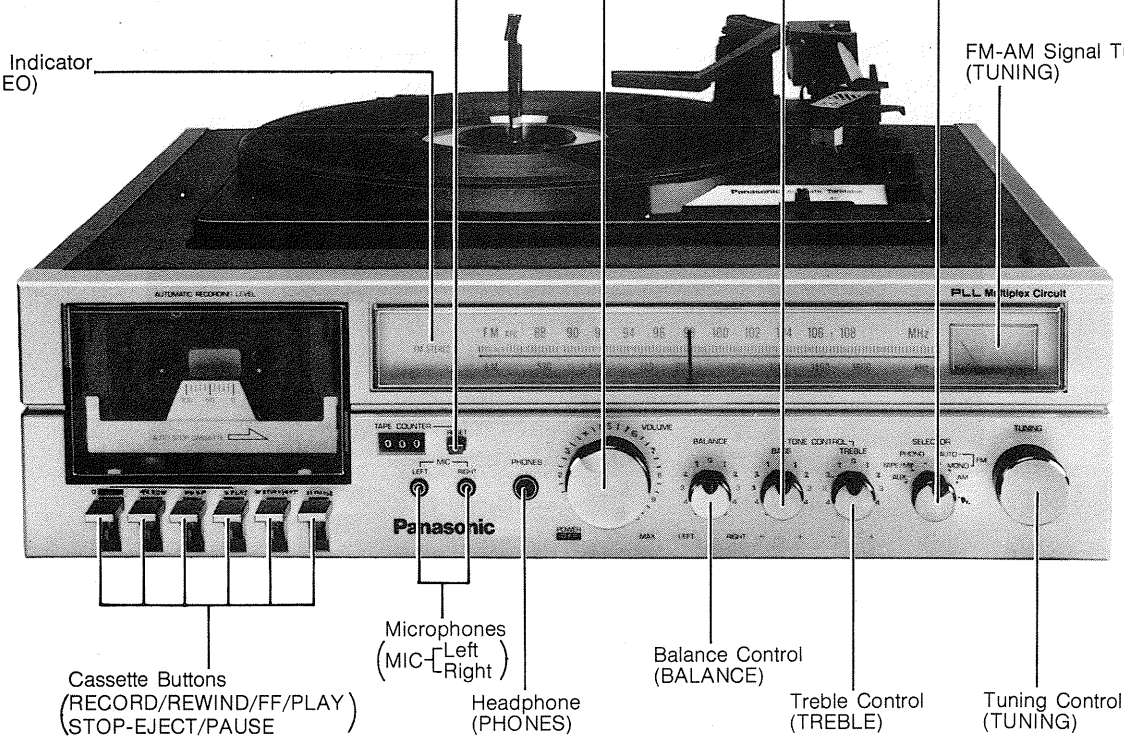
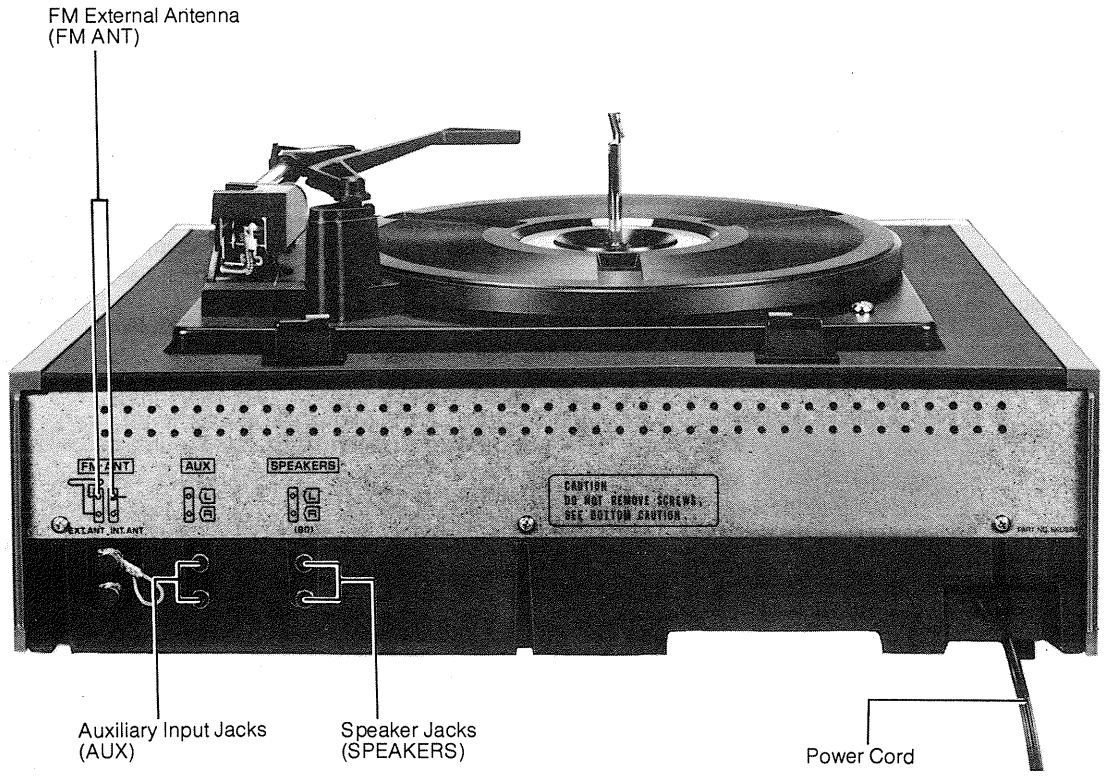
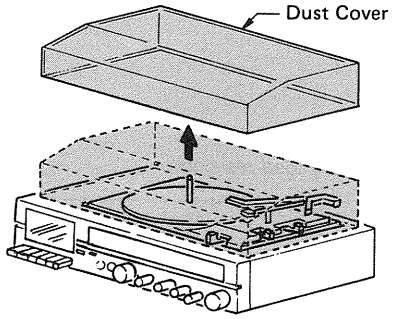
LOCATION OF CONTROLS



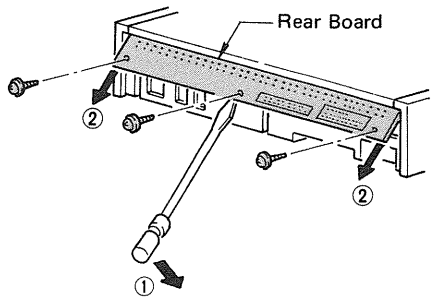


DISASSEMBLY INSTRUCTIONS

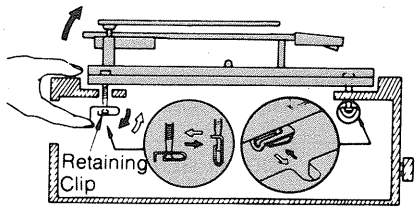
❶ Remove Dust Cover



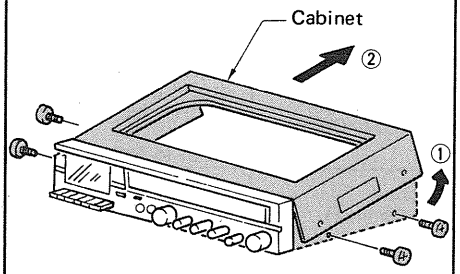
❷ Remove Rear Board



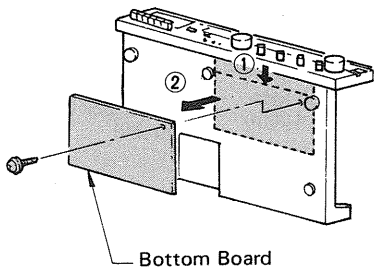
❸ Remove Record Player



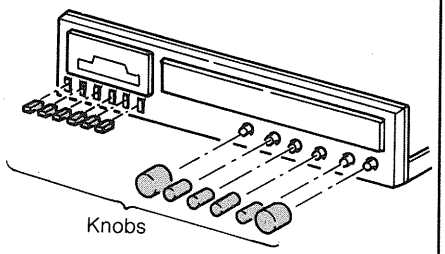
❹ Remove Cabinet



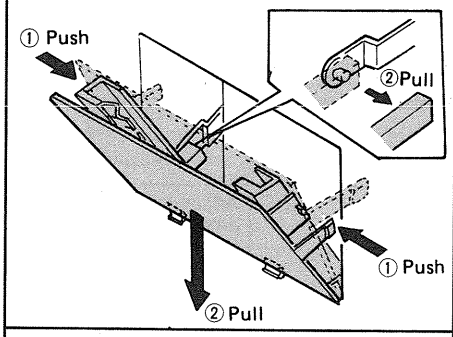
❺ Remove Bottom Board



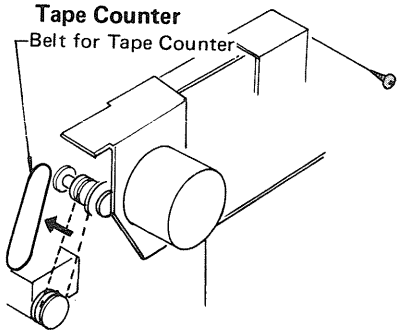
❻ Remove Knobs



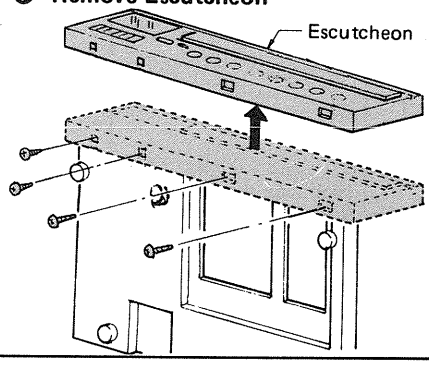
❼ Remove Cassette Lid



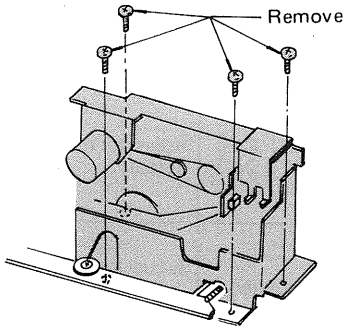
❽ Remove Screw and Belt for Tape Counter



❾ Remove Escutcheon



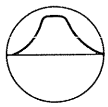
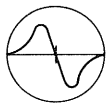
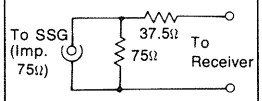
❿ Remove Cassette Deck



- **Replace Parts on P.C. Board** ..... Refer to ❶ ~ ❺
- **To Remove Escutcheon** ..... Refer to ❶ ~ ❹, ❻ ~ ❾
- **To Remove Cassette Deck** ..... Refer to ❶ ~ ❹, ❻ ~ ❿

ALIGNMENT INSTRUCTIONS (RADIO)–1

Control Points:
1. Volume Control..... Maximum (AM-IF and RF, FM-RF); Minimum (FM-IF)
2. Treble Control..... Center
3. Bass Control..... Center
4. Balance Control..... Center
5. Function Selector..... AM, FM MONO, FM AUTO
6. Power Switch..... ON
7. Output of signal generator should be no higher than necessary to obtain output reading.
8. Make certain that speaker system is connected to the receiver when aligning. (or use 8Ω dummy load resistors).

STEP	SIGNAL GENERATOR OR SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUST	REMARKS
	CONNECTION	FREQUENCY				
AM-IF AND RF ALIGNMENT						
1	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. with 400 Hz	Point of non-interference	Output meter across speaker jack (L) (Imp. 8Ω)	T201 (AM CFT) T202 (AM IFT)	Adjust for maximum output.
2		550 kHz 30% Mod. with 400 Hz	550 kHz (15.4 mm)		L201 (ANT Coil) L202 (OSC Coil)	• Adjust for maximum output by sliding coil (L201) along ferrite core. • Refer to Note.
3		1500 kHz 30% Mod. with 400 Hz	1500 kHz (134.1 mm)		CT201 (ANT Trimmer) CT202 (OSC Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
Note: Cement antenna coil with wax after completing alignment.						
FM-IF AND DETECTOR ALIGNMENT						
1	High side through 0.01 μF between point TP101 and E (ground).	10.7 MHz (400 kHz SWP.)	Point of non-interference (on/ about 98 MHz)	Connect vert. amp input of scope between point TP201 and TP202 (Ground)	T101 (FM 1st IFT) T203 (FM Disc. IFT) • Refer to Note.	Adjust T101 for maximum amplitude and symmetrical curve. 
2					T204 (FM Disc. IFT)	Adjust for maximum amplitude and proper linearity between about ±100 kHz markers. 
Note: Before aligning step 1, turn the cores of T204 fully counterclockwise.						
FM-RF ALIGNMENT						
1	Connect to EXT. FM antenna terminal through Dummy antenna. Common to chassis.	90 MHz 30% Mod. with 400 Hz	90 MHz (20.2 mm)	Output meter across speaker jack (L) (Imp. 8Ω)	L101 (FM ANT Coil) L102 (FM DET Coil)	Adjust for maximum output.
2	 FM DUMMY ANTENNA	106 MHz 30% Mod. with 400 Hz	106 MHz (124.1 mm)		CT101 (FM ANT Trimmer) CT102 (FM OSC Trimmer)	Adjust for maximum output. Repeat steps (1) and (2).
Note: As three output readings will be present, adjustments must be made at center frequency.						

ALIGNMENT INSTRUCTIONS (RADIO)—2

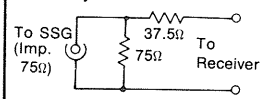
■ FM Stereo Alignment

Control Positions: Tuner:
Volume Control ..... Audible level of speaker sound
Treble Control ..... MIN
Bass Control..... Center
Band Selector ..... FM AUTO
Balance Control..... Center

EQUIPMENT CONNECTION	ADJUST	REMARKS
Connect frequency counter to TP301 and TP202 at 98 MHz, 30% modulation 60 dB input.	VR301	Adjust VR301 for 19 + 0.02 kHz on frequency counter reading.

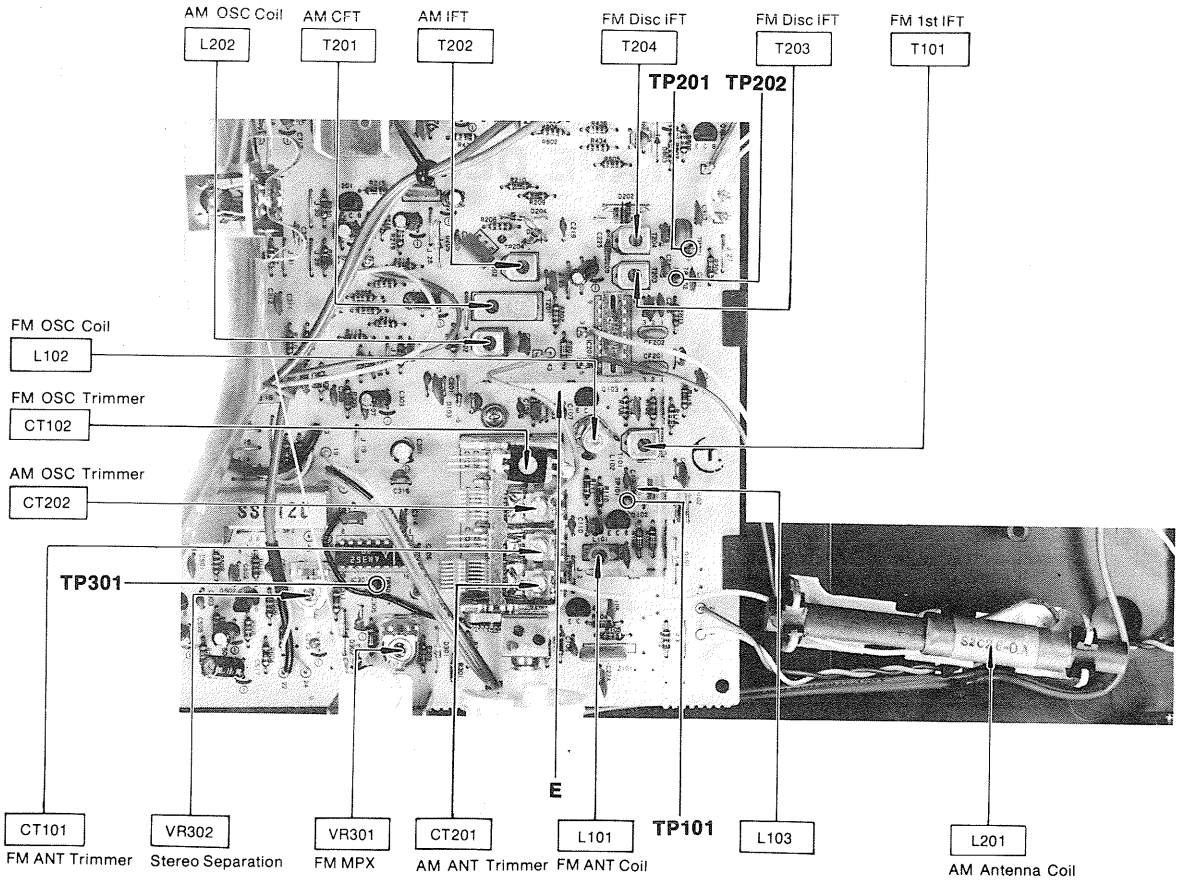
SEPARATION ALIGNMENT

Control Positions:
1. Stereo Modulator: Connect Stereo Modulator to EXT. Mod. terminal of signal generator.
2. Signal Generator:
   Modulation Rate of 19 kHz Pilot Signal 10%
   Modulation Rate of Right and Left Signal 27%
   Output Level..... 60 dB
3. Tuner (Balance Control): Adjust balance control so that output level from both channels becomes equal.

EQUIPMENT CONNECTION			ADJUST	REMARKS
SIGNAL GENERATOR	VTVM	OSCILLOSCOPE		
Connect to EXT. FM Antenna terminal through dummy antenna.  FM DUMMY ANTENNA	Connect across speaker jack. (Imp. 8Ω)	Connect vertical amp. input of scope to terminals of VTVM.	VR302 (Separation Control)	Adjust VR302 for minimum indication of VTVM from the left side output when the right side of stereo modulator is modulated. Adjust VR302 in the same way for the right side. Adjust for best balance between "L to R" and "R to L" separation.

Note: When aligning separation, disconnect frequency counter.

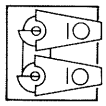
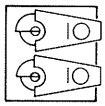
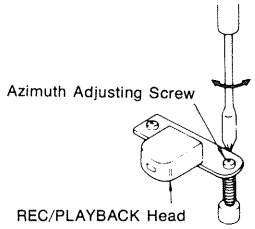
ALIGNMENT POINTS (RADIO)



ALIGNMENT INSTRUCTIONS

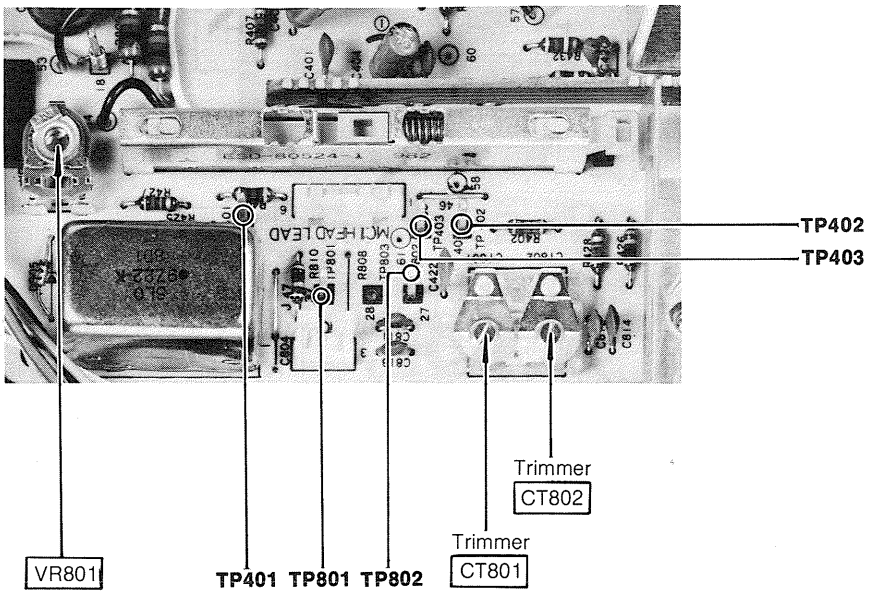
■ Cassette Tape Deck Alignment

Control Positions:
1. Function Selector ..... TAPE/MIC
2. Balance Control..... Center
3. Tape Deck Condition..... Recording Condition

STEP	ALIGNMENT ITEM	VTVM CONNECTION		VOLUME CONTROL	ADJUST	REMARKS
		Positive	Ground			
1	RECORDING BIAS VOLTAGE	TP401	TP403	MIN	CT801	• Set CT801 and CT802 to center position. CT801 CT802  CT801 CT802 
		TP402	TP403		CT802	• Adjust CT801 and CT802 for both equal value of VTVM reading.
					VR801	• Adjust VR801 for 3.3 mV on VTVM reading.
2	R/P HEAD AZIMUTH	Speaker Terminal	Speaker Terminal	.....	R/P Head Screw	• Adjust screw for max indication on VTVM. (Test Tape VTT 652). 

Note: Do not touch R/P Head and Erase when adjusting.

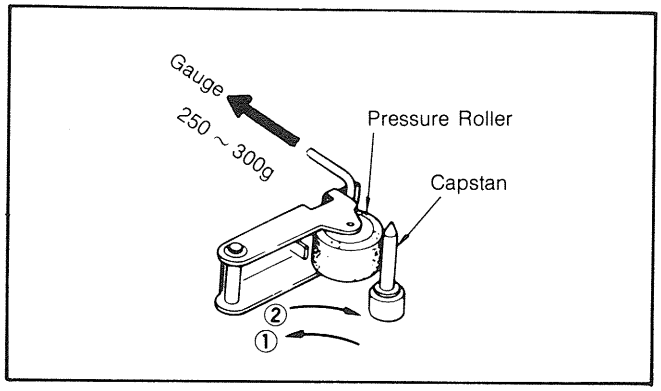
ALIGNMENT POINTS (CASSETTE TAPE DECK)



MECHANICAL ADJUSTMENT OF CASSETTE TAPE DECK

PRESSURE ROLLER ADJUSTMENT

1. Switch set to PLAY. (Do not insert cassette.)
2. Hook Spring gauge to arm of pressure roller.

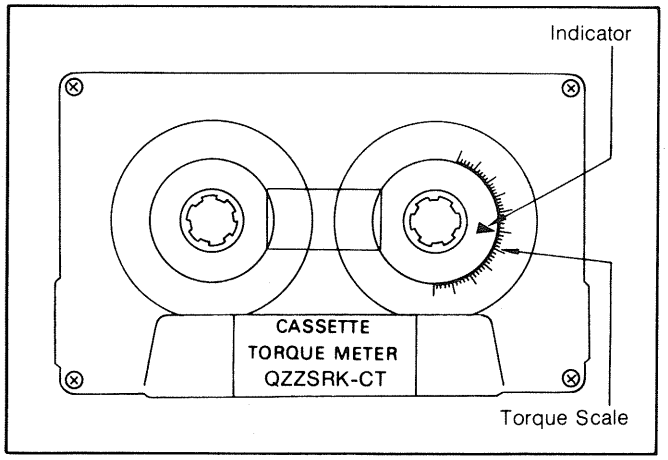


3. Pull pressure roller away from the capstan in the direction of arrow 1 with spring gauge and slowly permit the pressure roller to return toward capstan in the direction of arrow 2.
4. Measure tension at time when pressure roller makes contact with capstan (or when pressure roller starts rotating.)
5. The standard tension of pressure roller should be 250 ~ 380g.
6. If pressure is not within these limits;
   Clean the rubber roller and capstan with a soft cloth moistened with alcohol or replace pressure spring.

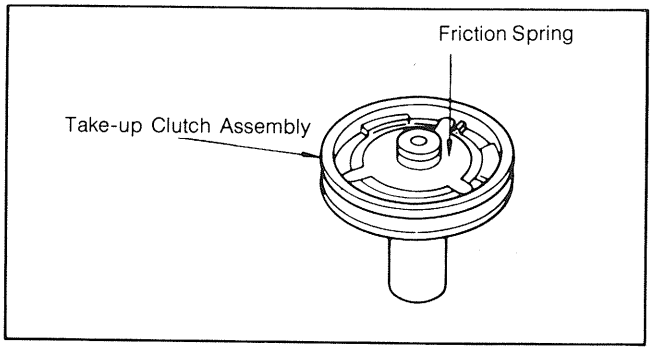
TAKE-UP TORQUE ADJUSTMENT

* Test Tape: SRK-CT (Take-up Torque Meter)

1. Insert test tape.
2. Rewind the tape to its starting point.
3. Switch set to PLAY.
4. Read "▶" mark of indicator on take-up side.

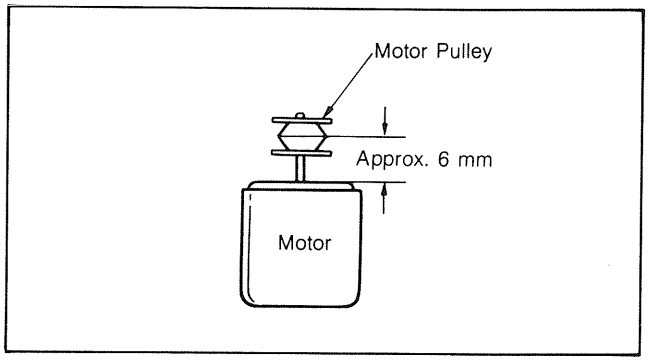


5. Repeat PLAY-STOP several times and read the average tension.
6. The standard take-up tension should be 30 ~ 70 g.cm. If take-up tension is not within these limits;
   a) Clean main belt, take-up reel and all parts which contact them with a cotton swab moistened with alcohol, and/or
   b) Switch set to "OFF", remove main belt and make sure that take-up reel and take-up clutch are rotating smoothly.
   c) Change take-up clutch tension by turning the friction spring under reel table, and/or
   d) Replace take-up clutch.



MOTOR PULLEY ADJUSTMENT

When replacing the motor, adjust the clearance between motor and motor pulley as in figure below.

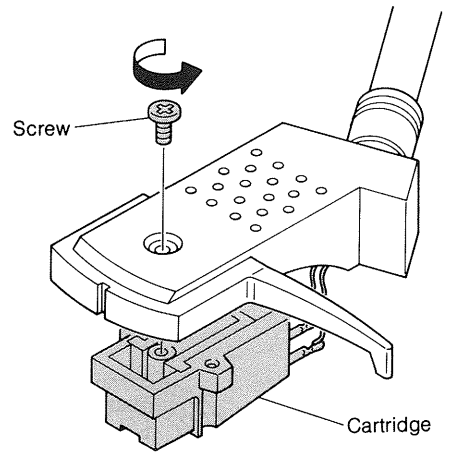


SERVICING THE RECORD CHANGER–1

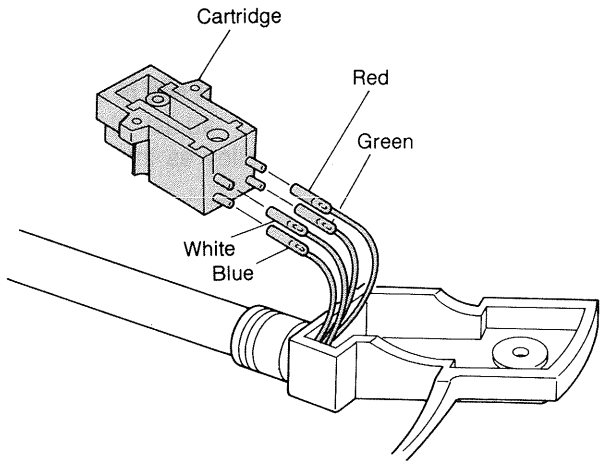
CARTRIDGE REPLACEMENT

➡ Remove ⇨ Install

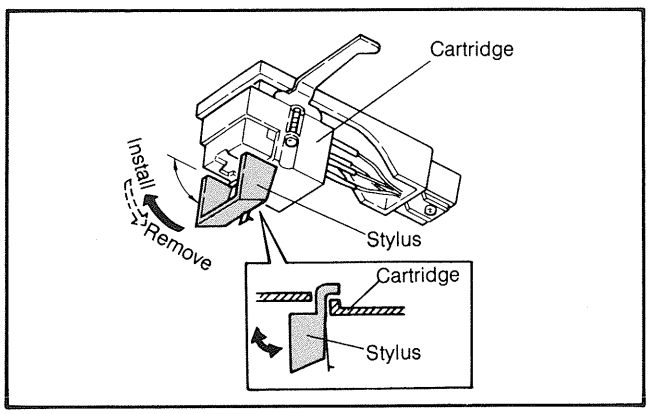
① Remove Screw



② Remove Wires

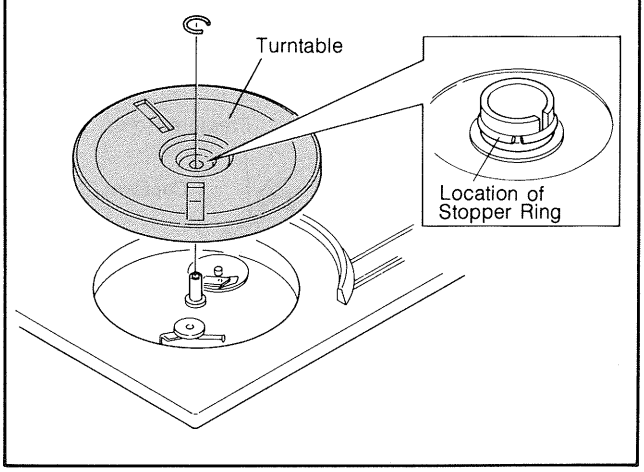


STYLUS REPLACEMENT

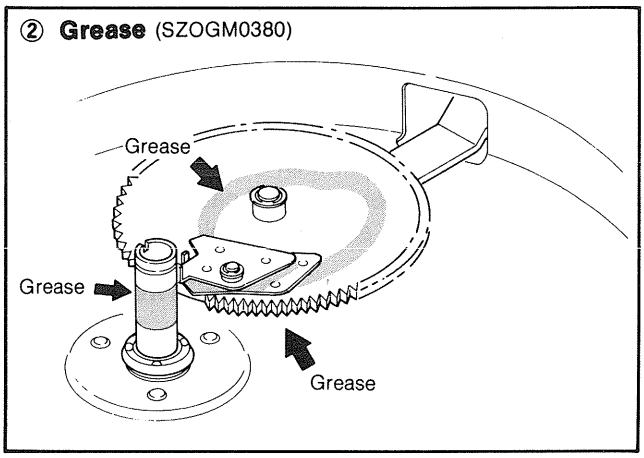


LUBRICATION

① Remove Turntable

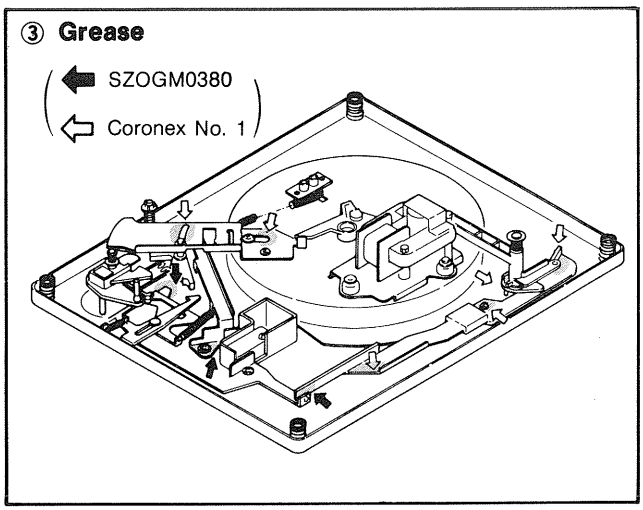


② Grease (SZOGM0380)



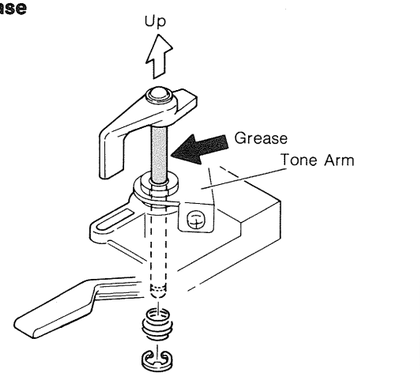
③ Grease

(⬅ SZOGM0380
⇦ Coronex No. 1)

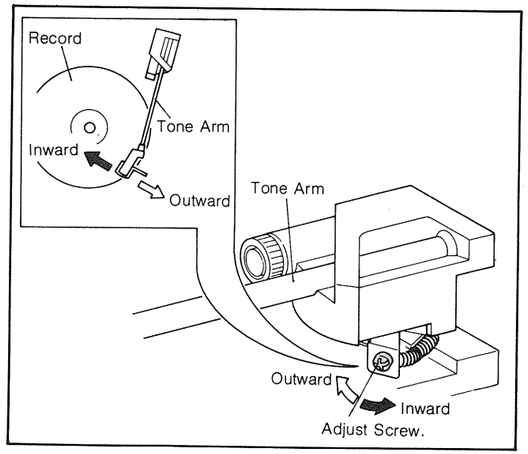


SERVICING THE RECORD CHANGER–2

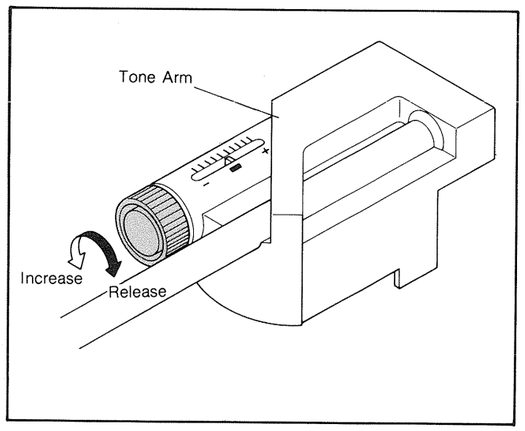
④ **Grease**



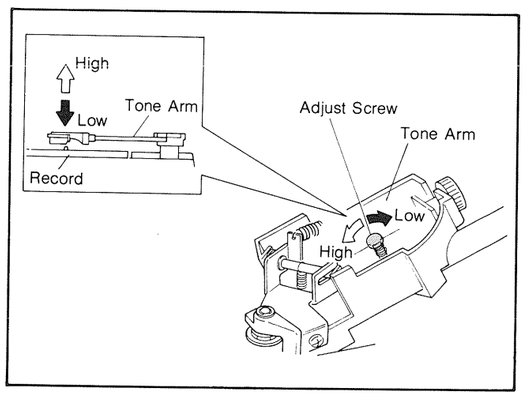
STYLUS DROP POINT ADJUSTMENT



STYLUS PRESSURE ADJUSTMENT



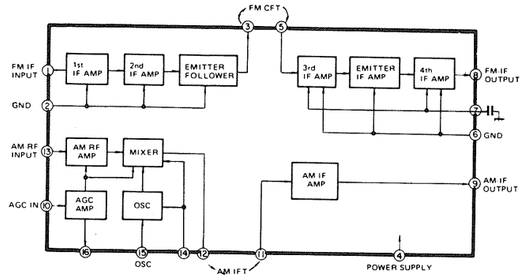
TONE ARM LIFTING HEIGHT ADJUSTMENT



IC BLOCK DIAGRAMS

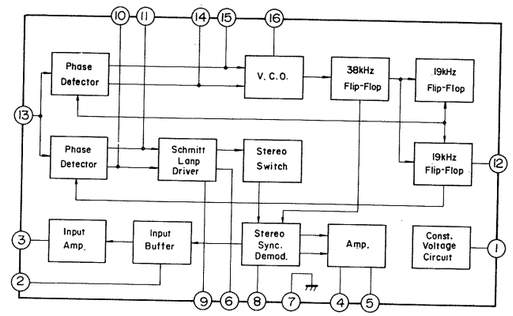
IC201

AN217P



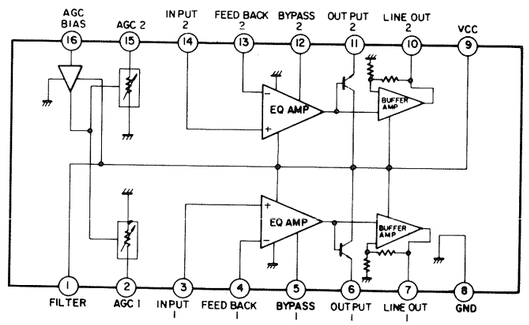
IC301

AN362



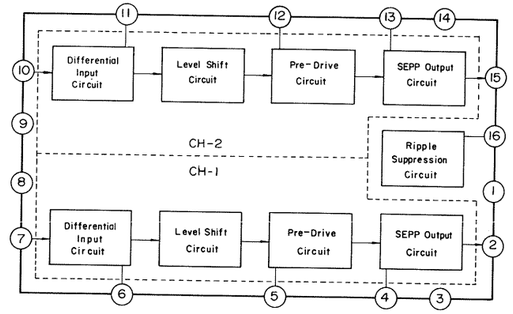
IC401

M51301P

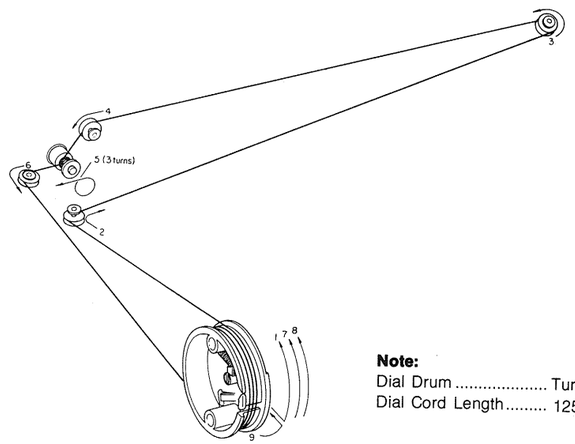


IC701

AN313

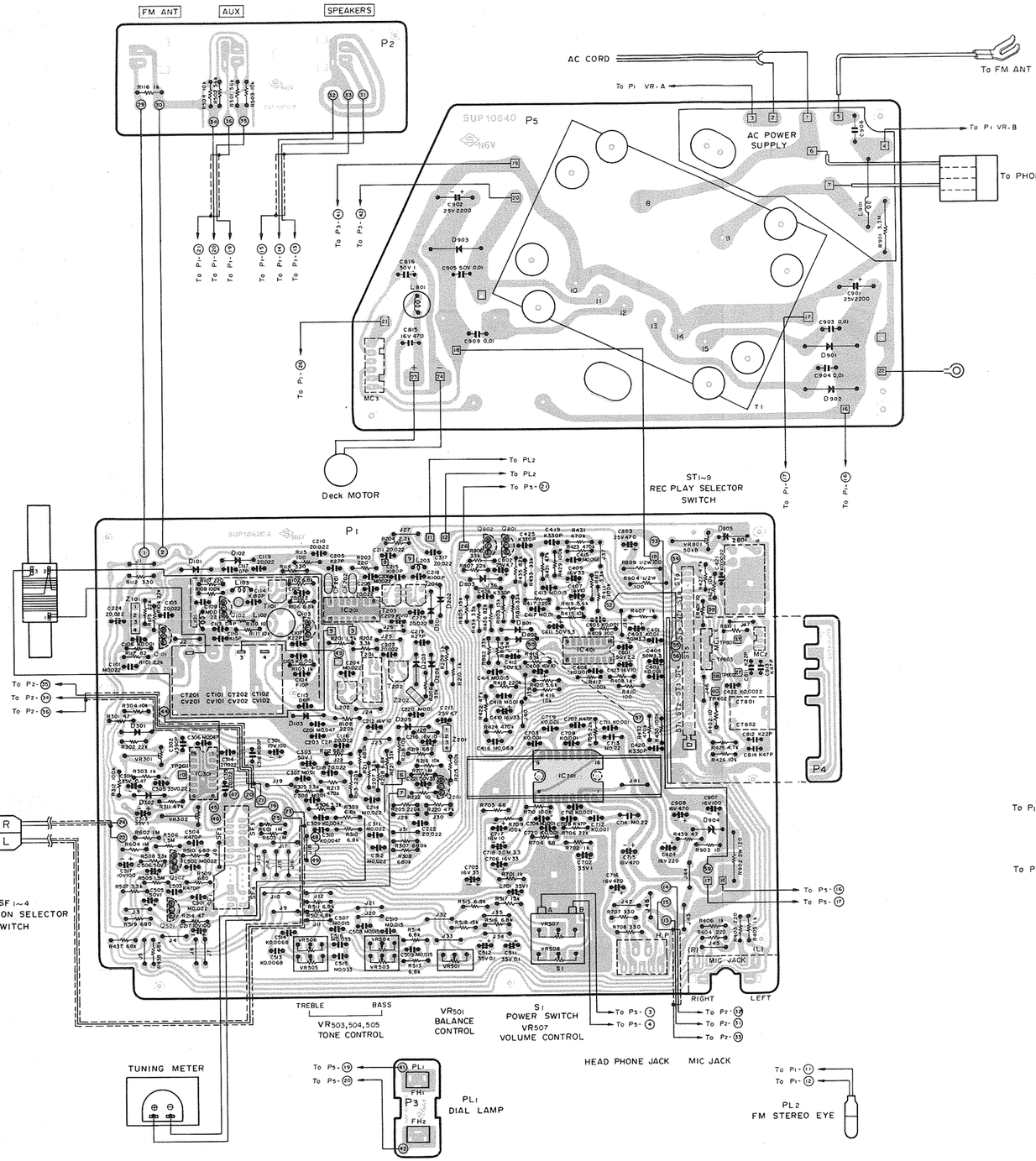


DIAL CORD STRINGING GUIDE



Note:
Dial Drum ..... Turn Fully Counterclockwise.
Dial Cord Length..... 125 cm

WIRING DIAGRAM



IC401

PIN	VOLTAGE
1	9.5V
2	0V
3	0.6V
4	0.01V
5	0.6V
6	3.2V
7	2.2V
8	0V
9	10.1V
10	2.2V
11	8.2V
12	0.6V
13	0.01V
14	0.6V
15	0V
16	ALC OFF 0V / ALC ON 0.1V

IC701

PIN	VOLTAGE
1	22.0V
2	9.6V
3	0V
4	1.3V
5	10.9V
6	9.4V
7	9.3V
8	0V
9	9.9V
10	9.3V
11	9.4V
12	10.9V
13	1.3V
14	0V
15	9.6V
16	21.6V

IC201

PIN	FM	AM
1	0.8V	0.8V
2	0V	0V
3	2.7V	2.7V
4	6.3V	6.3V
5	1.1V	1.1V
6	0V	0V
7	1.1V	1.1V
8	7.8V	7.8V
9	0.9V	7.4V
10	1.1V	1.5V
11	0.8V	0.8V
12	0.9V	7.4V
13	0.6V	0.7V
14	0.9V	1.6V
15	0.9V	7.4V
16	0.6V	0.7V

IC301

PIN	VOLTAGE
1	8.6V
2	3.4V
3	2.8V
4	4.7V
5	4.5V
6	15.4V FM ST 1.0V
7	0V
8	0.1V
9	0V
10	1.8V
11	1.8V
12	1.5V
13	1.6V
14	1.8V
15	1.8V
16	2.6V

Q801, 802

C	0V	
B	PLAY OFF	0.6V
	PLAY ON	0V
E	0V	
Ic		

Q201

NO	ON	OFF
C	0.69V	9.35V
B	0.73V	0.44V
E	—	—
Ic		

Q103

C	2.4V
B	1.7V
E	0.9V
Ic	0.9mA

Q102

C	8.7V
B	0.7V
E	8mV
Ic	0.8mA

Q101

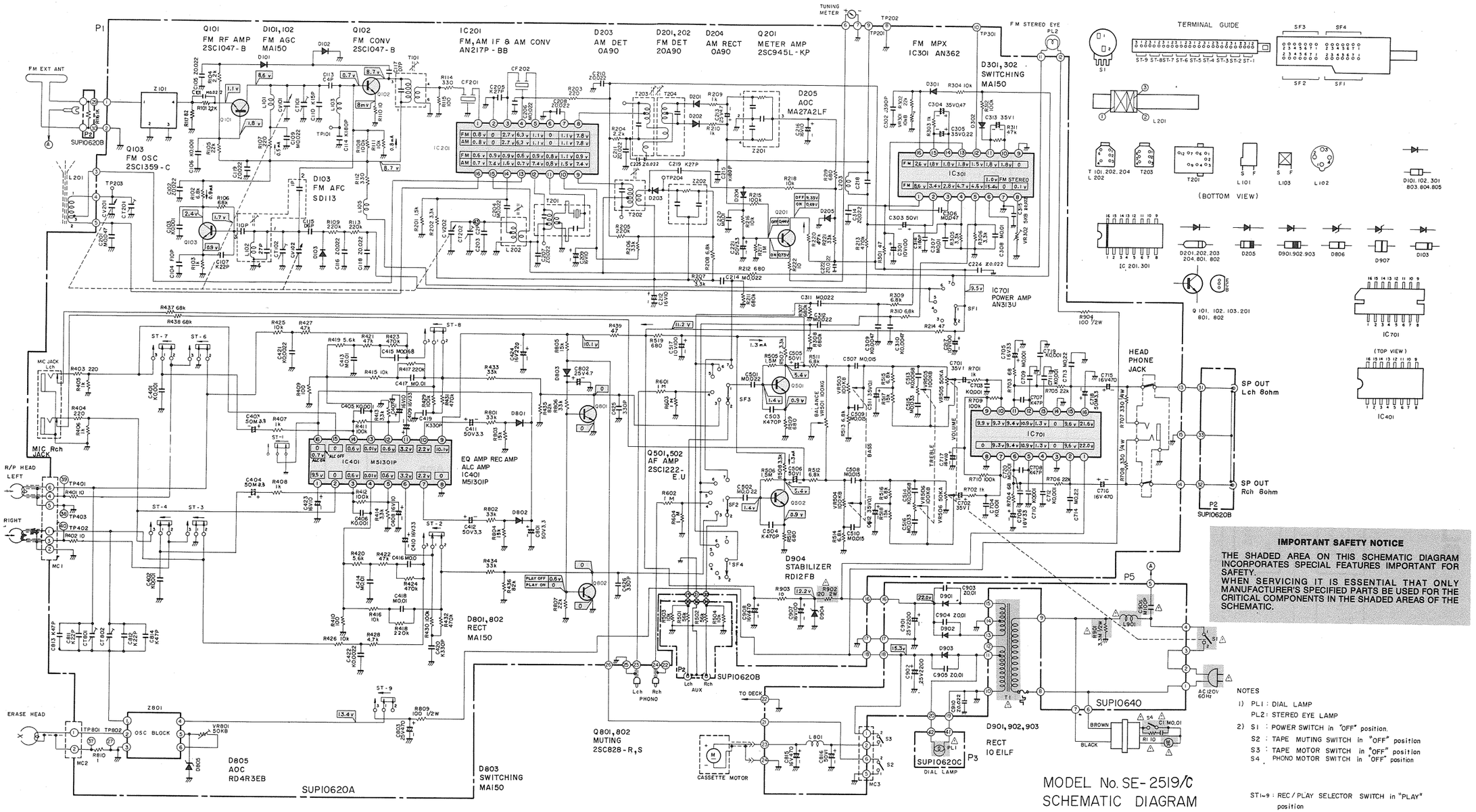
C	8.6V
B	1.6V
E	1.1V
Ic	0.5mA

Q501, 502

C	5.4V
B	1.4V
E	0.9V
Ic	1.3mA

* This diagram might be modified without notice for further development of technology.

SCHEMATIC DIAGRAM



R	116 403 404 405 401 406 402 810 437 438 104 101 105 102 106 103 107 425 407 408 427 108 110 109 421 113 112 111 417 419 414 413 415 410 411 422 424 416 409 426 412 420 418 201 809 429 431 430 432 433 801 803 802 804 434 436 435 203 805 806 807 439 204 206 205 519 601 603 207 602 604 503 501 209 210 208 502 504 211 216 215 217 212 222 218 220 505 507 307 506 509 308 508 511 903 510 512 902 514 219 221 513 213 301 309 302 303 515 310 304 214 305 517 306 516 518 311 701 224 709 312 710 703 315 705 702 704 706 904 901 707 708
C	201 401 402 813 811 812 814 101 105 102 106 103 107 104 119 109 403 404 110 113 114 115 116 413 405 406 421 423 118 117 415 417 407 408 409 416 422 414 418 803 420 419 410 205 206 203 204 207 801 209 208 210 802 411 412 424 211 425 212 225 517 215 213 221 220 501 214 502 504 506 907 908 503 505 216 311 312 509 508 815 816 314 218 222 507 511 510 309 301 302 303 513 310 512 514 516 304 316 515 305 306 307 905 217 701 702 313 308 705 707 709 710 719 703 706 708 704 720 711 712 713 714 715 718 716 906
L	201 102 101 103 202 801 203 901
T	101 201 203 202 204
SW	ST-7 ST-4 ST-6 ST-3 ST-1 ST-9 ST-8 ST-2 SF3 SF4 SF2 S3 S2 SF1 S4 S1

IMPORTANT SAFETY NOTICE

THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR SAFETY.
WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.

NOTES

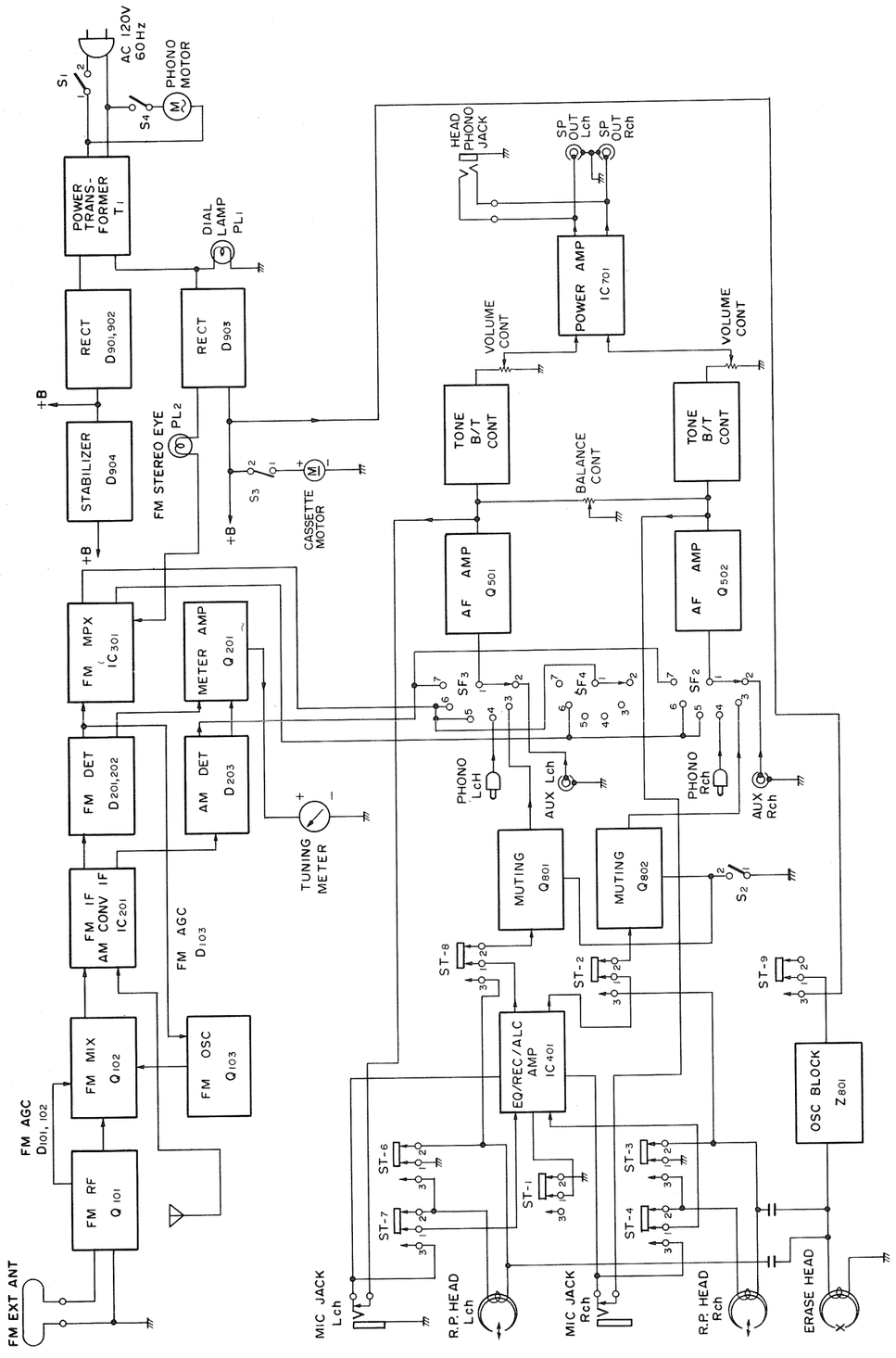
1) PL1 : DIAL LAMP
   PL2 : STEREO EYE LAMP
2) S1 : POWER SWITCH in "OFF" position.
   S2 : TAPE MUTING SWITCH in "OFF" position
   S3 : TAPE MOTOR SWITCH in "OFF" position
   S4 : PHONO MOTOR SWITCH in "OFF" position

   ST1~9 : REC/PLAY SELECTOR SWITCH in "PLAY" position
   SF1~4 : FUNCTION SELECTOR SWITCH in "AUX" position.
   (1.COMMON 2.AUX 3.TAPE/MIC 4.PHONO 5.FM AUTO 6.FM MONO 7.AM)
3) Letter, J, K, M, Z and P indicate tolerance of capacitors as follows.
   J: ±5%, K: ±10%, M: ±20%, Z: +80% −20%, P: +100% −0%
4) DC Voltages are to be measured with VTVM under no signal condition in "AM" or "FM" position.

MODEL No. SE-2519/C
SCHEMATIC DIAGRAM

* This diagram might be modified without notice for further development of technology.

BLOCK DIAGRAM



REPLACEMENT PARTS LIST

NOTES:

1. Components identified by ⚠ have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
2. Parts No. listed in this parts list are of service parts.

Ref. No.	Part No.	Description	Per Set (pcs.)
TRANSISTORS			
Q101	2SC1047	FM RM Amp	1
Q102	2SC1047	FM CONV	1
Q103	2SC1359	FM OSC	1
Q201	2SC945L	METER Amp	1
Q501,502	2SC1222	AF Amp	2
Q801,802	2SC828	Muting	2
INTEGRATED CIRCUIT			
IC201	AN217P	FM, AM IF and AM CONV	1
IC301	AN362	FM MPX	1
IC401	M51301P	EQ Amp, REC Amp	1
IC701	AN313-U	Power Amp	1
DIODES			
D101,102	MA150	FM AGC	2
D103	SD113	FM AFC	1
D201,202	2OA90	FM Det	2
D203	2OA90	AM Det	1
D204	2OA90	AM RECT	1
D205	MA27A2	AOC	1
D301,302	MA150	Switching	2
D801,802	MA150	Rect	2
D803	MA150	Switching	1
D805	RD4R3EB	AOC	1
D901,902	SM112	Rect	2
D903	SM112	Rect	1
D904	RD12FB	Stabilizer	1
LAMPS AND FUSES			
PL1 ⚠	XAMQ33P	Lamp	1
PL2 ⚠	XAMR34X500-1	Lamp	1

Ref. No.	Part No.	Description	Per Set (pcs.)
COILS AND TRANSFORMERS			
L101	SLO4N18-Z	Collector Coil FM	1
L102	SLO4P12-1P	OSC Coil FM	1
L103	SLQY11G-2	Trap Coil	1
L201	SLF2C26-O	Ferrite ANT Coil	1
L202	SLO2M10-M	OSC Coil AM	1
L203	SLQX250-Y	Coil RFC	1
L801	SLQU270-2K	Coil RFC	1
L901 ⚠	SLQY35S-2S	Coil RFC	1
T1 ⚠	SLT5V18-W	Power Transformer (for SE-2519)	1
T1 ⚠	SLT5V20-W	Power Transformer (for SE-2519C)	1
T101	RLI4M101-M	IFT FM 1st	1
T201	RLI7V102-M	CFT AM	1
T202	RLI2M402-M	IFT AM	1
T203	RLI4M501-M	IFT FM Disc.	1
T204	RLI4M502-M	IFT FM Disc.	1
CF201,202	SVF107MA5V	CFT FM	2
COMPONENT COMBINATIONS			
Z101	SXAPFWB2	L-C	1
Z201	EXA5DL04C	C-R	1
Z202	EXAF203Z471	C-R	1
OSCILLATOR BLOCK			
Z801	SLO9Z24-R	OSC Block	1
SWITCHES			
SF1～4	SSR120	Function	1
ST1～9	ESD80554	Rec/Play	1
VARIABLE RESISTORS			
VR301	EVTS3MA00B14	Preset 10kΩ B	1
VR302	EVLS6AA00B53	Preset 5kΩ B	1
VR501	EVH6UA505G15	Balance 100kΩ G	1
VR503,504	EWKEUA091B15	Bass 100kΩ B	1
VR505,506	EWKEUA091B15	Treble 100kΩ	1
VR507,508 (S1) ⚠	EWF1T1F25A54	Volume 50kΩ A with Power Switch	1
VR801	EVTS3MA00B54	Preset 50kΩ B	1

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per Set (pcs.)
VARIABLE CAPACITORS			
CT801,802	SCV2T12S	Trimmer	1
CV101,102	SCVC145J139	Tuning Capacitor	
201,202		with Trimmer	1
(CT101,102, 201,202)			
PACKINGS			
1	SPN3572	Pad Right	1
2	SPN3574	Pad Left	1
3	XZB75X67C05S	Set Cover	1
4	SPN2M118ZA	Pad, Speaker	2
5	SPN2M094ZA	Divider	1
6	SPP2M014ZA	Plastic Bag	2
7	SPG2M111ZA	Master Carton	1
8	SPG2M113ZA	Inner Carton	1
9	SPN2M098ZA	Pad, Bottom	1
10	SPS2M016ZA	Pad, Dust Cover	2
OTHERS			
1	SQX50058	Instruction Book (for SE-2519)	1
1	SQX50082	Instruction Book (for SE-2519C)	1

Numbering System of Resistor

Type	Wattage	Tolerance	Value
Three Letters	One or Two Letters	Two or Three Letters	Three or Four Letters

Example: E R D 2 5 T J 1 0 1

Resistor Type	Tolerance
ERD: Carbon Film	F: ±1%
ERC: Solid	J: ±5%
ERX: Metal Film	K: ±10%
ERG: Metal Oxide Film	
ERO: High Stability Metal Film	
ERF: Flameproof Wire-Wound Bath-Tube	
ERQ: Fuse Type Metal Film	

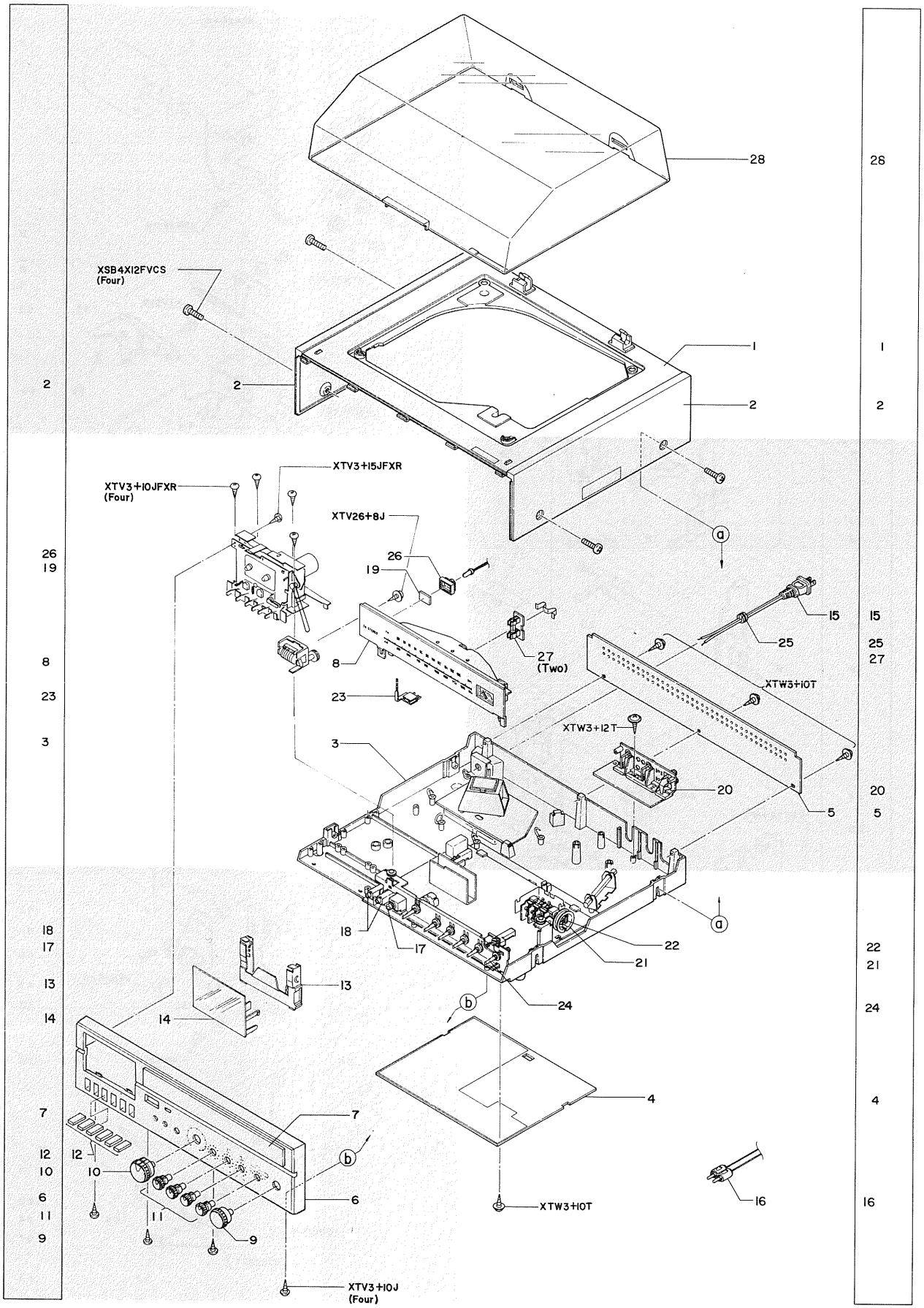
Ref. No.	Part No.	Description	Per Set (pcs.)
RESISTORS			
R101	ERD25TJ202	2.2kΩ 1/4W	1
R102	ERD25TJ682	6.8kΩ 1/4W	1
R103	ERD25TJ102	1kΩ 1/4W	1
R104	ERD25TJ222	2.2kΩ 1/4W	1
R105	ERD25TJ223	22kΩ 1/4W	1
R106	ERD25TJ683	68kΩ 1/4W	1
R107	ERD25TJ221	220Ω 1/4W	1
R108	ERD25TJ104	100kΩ 1/4W	1
R109	ERD25TJ224	220kΩ 1/4W	1
R110	ERD25TJ100	10Ω 1/4W	1
R111	ERD25TJ103	10kΩ 1/4W	1
R112	ERD25TJ331	330Ω 1/4W	1
R113	ERD25TJ224	220kΩ 1/4W	1
R114	ERD25TJ331	330Ω 1/4W	1
R115	ERD25TJ101	100Ω 1/4W	1
R116	ERD25TJ102	1kΩ 1/4W	1
R117	ERD25TJ820	82Ω 1/4W	1
R201	ERD25TJ152	1.5kΩ 1/4W	1
R202	ERD25TJ332	3.3kΩ 1/4W	1
R203	ERD25TJ221	220Ω 1/4W	1
R204	ERD25TJ222	2.2kΩ 1/4W	1
R205	ERD25TJ224	220kΩ 1/4W	1
R206	ERD25TJ333	33kΩ 1/4W	1
R207	ERD25TJ332	3.3kΩ 1/4W	1
R208	ERD25TJ682	6.8kΩ 1/4W	1
R209,210	ERD25TJ102	1kΩ 1/4W	1
R211	ERD25TJ684	680kΩ 1/4W	1
R220	ERD25TJ473	47kΩ 1/4W	1
R221	ERD25TJ333	33kΩ 1/4W	1
R212	ERD25TJ681	680Ω 1/4W	1
R213	ERD25TJ474	470kΩ 1/4W	1
R214	ERD25TJ470	47Ω 1/4W	1
R215	ERD25TJ104	100kΩ 1/4W	1

REPLACEMENT PARTS LIST

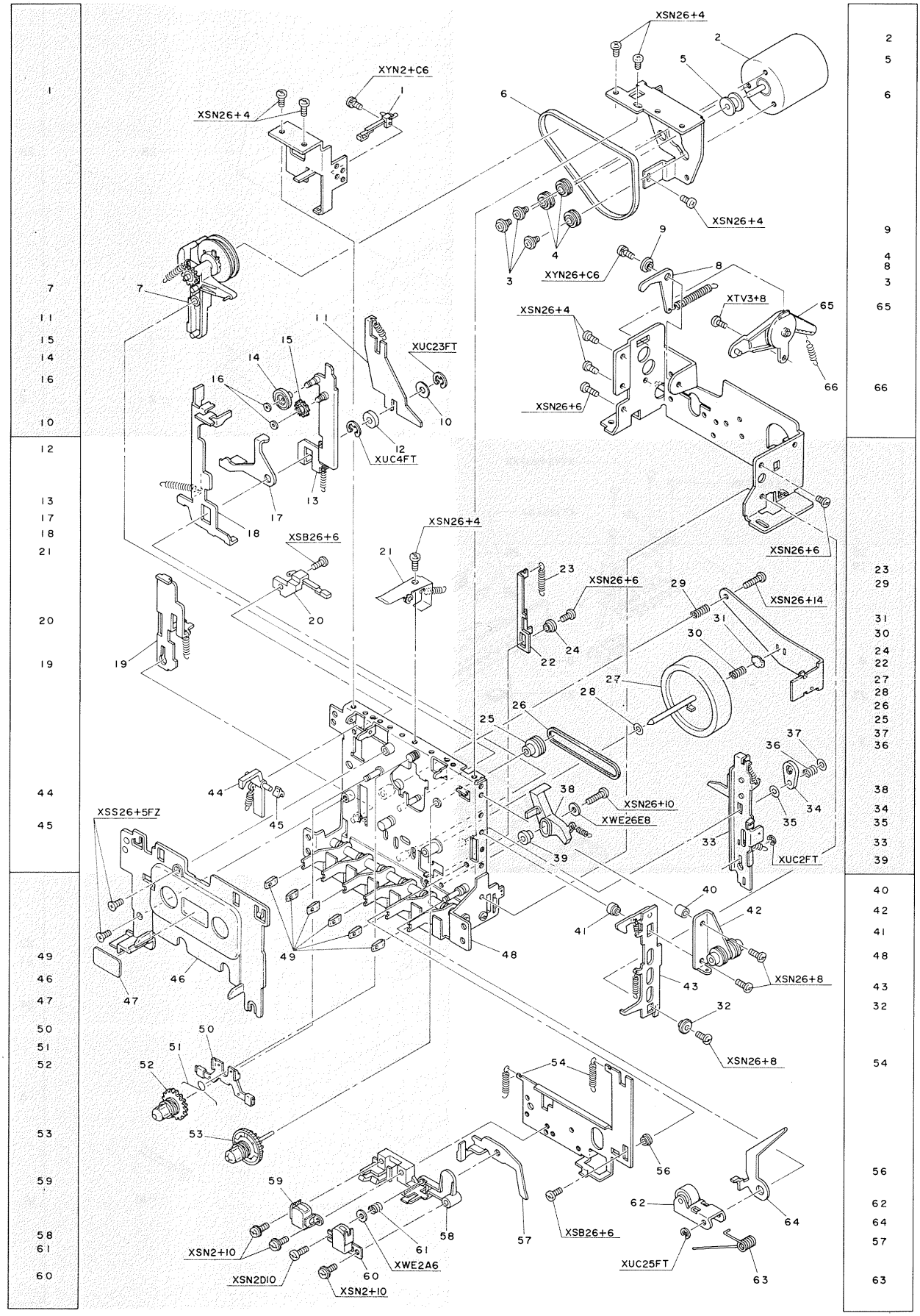
Ref. No.	Part No.	Description	Per Set (pcs.)
R216	ERD25TJ103	10kΩ 1/4W	1
R217	ERD25TJ105	1MΩ 1/4W	1
R218	ERD25TJ103	10kΩ 1/4W	1
R219	ERD25TJ681	680Ω 1/4W	1
R220	ERD25TJ473	47kΩ 1/4W	1
R221	ERD25TJ333	33kΩ 1/4W	1
R222	ERD25TJ100	10Ω 1/4W	1
R301	ERD25TJ470	47Ω 1/4W	1
R302	ERD25TJ223	22kΩ 1/4W	1
R303	ERD25TJ102	1kΩ 1/4W	1
R305,306	ERD25TJ332	3.3kΩ 1/4W	2
R307,308	ERD25TJ684	680kΩ 1/4W	2
R309,310	ERD25TJ682	6.8kΩ 1/4W	2
R312	ERD25TJ104	100kΩ 1/4W	1
R314	ERD25TJ103	10kΩ 1/4W	1
R401,402	ERD25TJ100	10kΩ 1/4W	2
R403,404	ERD25TJ221	220Ω 1/4W	2
R405,406	ERD25TJ102	1kΩ 1/4W	2
R407,408	ERD25TJ102	1kΩ 1/4W	2
R409,410	ERD25TJ101	100Ω 1/4W	2
R411,412	ERD25TJ104	100kΩ 1/4W	2
R413,414	ERD25TJ332	3.3kΩ 1/4W	2
R415,416	ERD25TJ103	10kΩ 1/4W	2
R417,418	ERD25TJ224	220kΩ 1/4W	2
R419,420	ERD25TJ562	5.6kΩ 1/4W	2
R421,422	ERD25TJ473	47kΩ 1/4W	2
R423,424	ERD25TJ474	470kΩ 1/4W	2
R425,426	ERD25TJ103	10kΩ 1/4W	2
R427,428	ERD25TJ472	4.7kΩ 1/4W	2
R429,430	ERD25TJ104	100kΩ 1/4W	2
R431,432	ERD25TJ474	470kΩ 1/4W	2
R433,434	ERD25TJ333	33kΩ 1/4W	2
R435,436	ERD25TJ823	82kΩ 1/4W	2
R437,438	ERD25TJ683	68kΩ 1/4W	2
R439	ERD25TJ470	47Ω 1/4W	1
R501,502	ERD25TJ563	56kΩ 1/4W	2
R503	ERD25TJ103	10kΩ 1/4W	1
R504	ERD25TJ103	10kΩ 1/4W	1
R505,506	ERD18TJ155	1.5MΩ 1/8W	2
R507,508	ERD25TJ332	3.3kΩ 1/4W	2
R509,510	ERD25TJ681	680Ω 1/4W	2
R511,512	ERD25TJ682	6.8kΩ 1/4W	2
R513,514	ERD25TJ682	6.8kΩ 1/4W	2
R515,516	ERD25TJ682	6.8kΩ 1/4W	2
R517,518	ERD25TJ153	15kΩ 1/4W	2
R519	ERD25TJ681	680Ω 1/4W	1
R601,602	ERD25TJ105	1MΩ 1/4W	2
R603,604	ERD25TJ105	1MΩ 1/4W	2
R701,702	ERD25TJ102	1kΩ 1/4W	2
R703,704	ERD25TJ680	68Ω 1/4W	2
R705,706	ERD25TJ223	22kΩ 1/4W	2
R707,708	ERD25TJ331	330Ω 1/4W	2
R709,710	ERD25TJ104	100kΩ 1/4W	2

Ref. No.	Part No.	Description	Per Set (pcs.)
R801,802	ERD25TJ333	33kΩ 1/4W	2
R803,804	ERD25TJ153	15kΩ 1/4W	2
R805	ERD25TJ153	15kΩ 1/4W	1
R806	ERD25TJ333	33kΩ 1/4W	1
R807	ERD25TJ223	22kΩ 1/4W	1
R809	ERD50TJ101	100Ω 1/2W	1
R810	ERD18TJ1R0	1Ω 1/8W	1
R901 ⚠	ERC12ZGK335	3.3MΩ 1/2W	1
R902 ⚠	ERG2ANJ221	220Ω 2W	1
R903	ERD25TJ100	10Ω 1/4W	1
R904	ERD50TJ101	100Ω 1/2W	1

PARTS LOCATION OF CABINET AND CHASSIS



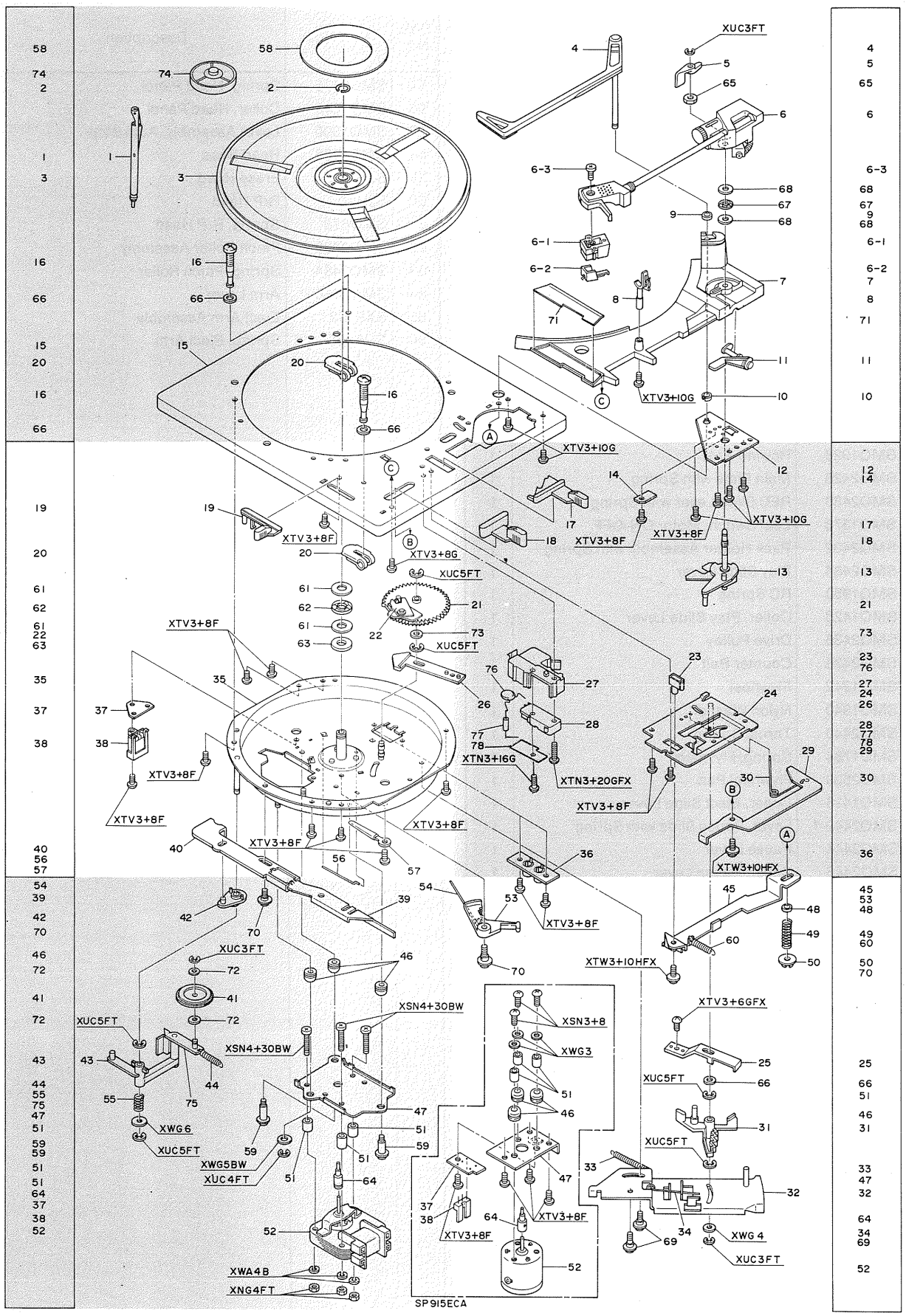
EXPLODED VIEW OF CASSETTE TAPE DECK (SJD554-1)



REPLACEMENT PARTS LIST OF CASSETTE TAPE DECK (SJD554-1)

Ref. No.	Part No.	Description	Per Set (pcs.)
1	SMQ1698	Leaf Switch, Muting	1
2	MHT5NF2X1	Motor	1
3	SMQ1908	Spacer Screw, Motor	3
4	SMQ1834	Rubber Cushion, Motor	3
5	SMQ1662	Motor Pulley	1
6	SMQ2418	Main Belt	1
7	SMQ1930	RF Clutch Assembly with Spring	1
8	SMQ2420	REC Lever with Spring	1
9	SMQ1426	Coller, REC Lever	1
10	SMQ2422	Coller A	1
11	SMQ2426	Operation Plate, Muting with Spring	1
12	SMQ2424	Coller B	1
13	SMQ1922	FF Idler Arm Assembly with Spring	1
14	SMQ1450	Idler Wheel	1
15	SMQ1924	FF Gear	1
16	SMQ1952	Washer	2
17	SMQ1928	Rewind Arm	1
18	SMQ2428	Main Plate with Spring	1
19	SMQ2430	REC Slide Lever with Spring	1
20	SMQ1378	Leaf Switch, Motor ON-OFF	1
21	SMQ2432	Pack Holder Assembly with Spring	1
22	SMQ2434	Play Slide Lever	1
23	SMQ1950	RC Spring	1
24	SMQ1426	Coller, Play Slide Lever	1
25	SMQ2436	Drive Pulley	1
26	SMQ2438	Counter Belt	1
27	SMQ1942	Flywheel	1
28	SMQ1940	Nylon Washer	1
29	SMQ2440	Thrust Spring	1
30	SMQ1784	Spring, Flywheel	1
31	SMQ2538	Flywheel Pad	1
32	SMQ1426	Coller, Eject Slide Lever	1
33	SMQ2442-1	Lever, Pause Slide with Spring	1
34	SMQ2444	Pause Lever	1
35	SMQ2446	Coller, Pause Lever	1
36	SMQ2448	Spring, Pause Lever	1
37	SMQ2450	Nylon Washer	1
38	SMQ2452	Lever Auto Stop Drive with Spring	1
39	SMQ2454	Coller, Auto Stop Lever	1
40	SMQ2456	Coller, Counter Pulley Arm	1
41	SMQ2458	Coller, Eject Slide Lever	1
42	SMQ2460	Counter Pulley Arm Assembly	1
43	SMQ2462	Eject Slide Lever Assembly with Spring	1
44	SMQ2464	REC Safety Lever with Spring	1
45	SMQ1706	Stopper, REC Safety Lever	1
46	SGE932	Cover	1
47	SDH220	Fluorescent Paper	1
48	SMQ2466	Push Button Frame Assembly	1
49	SMQ2468	Spring, Push Button	6
50	SMQ2470	Brake Arm Assembly	1
51	SMQ2472	Spring, Brake Arm	1
52	SMQ2474	Supply Reel Assembly	1
53	SMQ2476	Take up Reel Assembly	1
54	SMQ2478	Spring, Head Panel	2
56	SMQ1648	Coller, Head Panel	1
57	SMQ1900	Lever Assembly, Auto Stop	1
58	SMQ1986	Head Base	1
59	SJH14	Erase Head	1
60	SJH30	R/P Head	1
61	SMQ678	Spring, R/P Head	1
62	SMQ2482	Pinch Roller Assembly	1
63	SMQ2484	Spring, Pinch Roller	1
64	SMQ2486	Arm Lever	1
65	SXE152	Eject Arm Assembly	1
66	SUS306	Spring, Eject Arm	1

EXPLODED VIEW OF RECORD CHANGER (SP915ACA/ACA-MC)



REPLACEMENT PARTS LIST OF RECORD CHANGER (SP915ACA/ACA-MC)

Ref. No.	Part No.	Description	Per Set (pcs.)
1	SFVS915A01E	Multiple-Plug Spindle	1
2	SFXT920A01	Stopper Ring	1
3	SFTE915A01	Turntable Plater	1
4	SFXL915A01E	Record Pusher	1
5	SFUM915A03	Lift Guide	1
6	SFPBK6100A	Pickup Arm Assembly	1
6-1	EPC09STAD	Cartridge	1
6-2	EPS27STSD	Stylus	1
6-3	SFPEV6102	Screw	1
7	SFKP915A01	Arm Base	1
8	SFKU915A01E	Arm Rest Assembly	1
9	SFGC915A01	Record Push, Rubber	1
10	SFUM915A06	Stop Collar	1
11	SFKT915A01	Cueing Lever	1
12	SFUK915A01	Pickup Plate	1
13	SFXJ915A01A	Locating Plate Assembly	1
14	SFDP915A01	Print Base	1
15	SFBP915A01E	Main Plate Assembly	1
16	SFXG411-1	Transit Screw	2
17	SFKT915A02	Size Select Knob	1
18	SKFT915A03	Start Knob	1
19	SFKT915A04	Speed Select Knob	1
20	SFUP411-6	Retaining Clip	2
21	SFUG915A01E	Main Gear Assembly	1
22	SFUK915A01E	Actuating Link Assembly	1
23	SFUM915A09	Select Guide	1
24	SFUK915A02E	Sub Plate Assembly	1
25	SFUC915A02	Actuating Slide B	1
26	SFUC915A01	Actuating Slide A	1
27	SFUM915A15	Switch Cover	1
28	SFDS-AH47009	Micro Switch	1
29	SFUP915A02E	Start Rod Assembly	1
30	SFQS915A01	Spring	1
31	SFUM915A08	Index Lever	1
32	SFUP915A07E	Operating Plate Assembly	1
33	SFQH915A04	Spring	1
34	SFQS915A04	Spring	1
35	SFUK915A03E	Base Plate Assembly	1
36	SFDJ915A01	Pin Jack Receptacle	1
37	SFUP915A08	Barrier	1
38	SFDK1554-P3	AC 4-Pin Connector Assembly	1
39	SFUP915A05	Speed Select Lever B	1
40	SFUM915A13	Speed Select Lever A	1
41	SFMI915A01E	Idler Assembly	1
42	SFMK915A01	Idler Cam	1
43	SFUM915A14	Speed Change Lever	1
44	SFQH915A03	Spring	1
45	SFUP915A03	Select Rod	1
46	SFGC915A02	Motor Cushion Rubber	3
47	SFMF915A01	Motor Plate	1
48	SFUM915A10	Collar	1
49	SFQA915A05	Spring	1

Ref. No.	Part No.	Description	Per Set (pcs.)
50	SFUM915A11	Lock Collar	1
51	SFXJ915A10	Spacer	3
52	2E10D21P	Motor	1
53	SFUM915A12	Spindle Lever	1
54	SFQS915A03	Spring	1
55	SFQA915A06	Spring	1
56	SFQS915A02	Spring	1
57	SHE36-3	Cord Clamper	1
58	SFTK915A01	Decoration Ring	1
59	SFXG915A01	Screw	2
60	SFQH915A01	Spring	1
61	SFXW920A03	Turntable Washer	2
62	SFUP920A09E	Ball Race	1
63	SFGC915A03	Turntable Support Rubber	1
64	SFMC915A01	Motor Pulley (60 Hz)	1
64	SFMC915A02	Motor Pulley (50 Hz)	1
65	SFXN915A01	Nut	1
66	QBJ3309	Washer	2
67	SFUP890B01E	Ball race	1
68	SFXW890B01	Pickup Washer	2
69	SFXG910-04	Screw	2
70	SFXG910-06	Screw	2
71	SFNP915A01	Plate	1
72	QBJ3066	Washer	1
73	SFPEW1100	Washer	1
74	SFVA920A01	Manual Spindle	1
75	SFVP915A06E	Idler Lever Assembly	1
76	ECQF1A103MD	Capacitor (for SE-2519)	1
76	ECQU1A103MC	Capacitor (for SE-2519C)	1
77	ERD12PK100	Resistor	1
78	SMX212	Cover (only SG-2519C)	1
—	SFVA701-1E	45 r.p.m. Automatic Adaptor (optional)	1

SE-2519/C

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